Amendments to the Claims:

Listing of Claims:

1. (currently amended)   A memory management method used in the decoding process of
   a video frame, for storing at least one motion vector ~~vector(s)~~ of a decoded first
   macroblock as at least one candidate predictor ~~predictor(s)~~ for future use in the
   decoding process, the method comprising:
   allocating a first memory space and a second memory space in a first memory,
      wherein each of the first and the second memory spaces is sufficient for
      storing one motion vector; and
   when the first macroblock comprises only one first motion vector, storing the first
      motion vector in the first or the second memory space.

2. (original)   The method of claim 1, further comprising:
   when the first macroblock comprises a first block, a second block, a third block, and
      a fourth block, storing the motion vector of the third block in the first memory
      space and storing the motion vector of the fourth block in the second memory
      space.

3. (original)   The method of claim 1, wherein the video frame is a progressive frame.

4. (original)   The method of claim 1, wherein the video frame is an interlaced frame.

5. (original)   The method of claim 4, further comprising:
   when the first macroblock comprises a first field and a second field, storing the
      motion vector of the first field in the first memory space and storing the
      motion vector of the second field in the second memory space.

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6. (original)   The method of claim 1, wherein the first memory is a DRAM, an SRAM, or registers.

5   7. (currently amended)   A memory management method used in the decoding process of a video frame, for storing [[the]] at least one motion vector vector(s) of a decoded first macroblock as at least one candidate predictor predictor(s) for use in decoding a next macroblock, the method comprising:

allocating a first third memory space and a second fourth memory space in a first

10   second memory, wherein each of the first third and the second fourth memory spaces is sufficient for storing one motion vector; and

when the first macroblock comprises only one first motion vector, storing the first motion vector in the first third or the second fourth memory space.

15   8. (currently amended)   The method of claim 7, further comprising:

when the first macroblock comprises a first block in a top-left corner, a second block in a top-right corner, a third block in a bottom-left corner, and a fourth block in a bottom-right corner, storing the motion vector of the second third block in the first third memory space and storing the motion vector of the

20   fourth block in the second fourth memory space.

9. (original)   The method of claim 7, wherein the video frame is a progressive frame.

10. (original)   The method of claim 7, wherein the video frame is an interlaced frame.

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11. (currently amended) The method of claim 10, further comprising:

when the first macroblock comprises a first field and a second field, storing the motion vector of the first field in the first third memory space and storing the

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motion vector of the second field in the <u>second</u> ~~fourth~~ memory space.

12. (original) The method of claim 7, wherein the first memory comprises processing registers, registers, a DRAM, or an SRAM.

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13. (currently amended) A row-based memory management method used in the decoding process of a video frame, for storing the motion vectors of a plurality of decoded macroblocks as candidate predictors for use in the decoding process, wherein each row of the video frame comprises N macroblocks, the method comprising:

10 allocating N memory units in a first memory, wherein each memory unit is sufficient for storing [[the]] <u>at least one</u> motion <u>vector</u> ~~vector(s)~~ of one macroblock;

when a first macroblock located at an Lth row and a Kth column is decoded, storing [[the]] <u>at least one</u> motion <u>vector</u> ~~vector(s)~~ of the first macroblock in a Kth

15 memory unit of the memory units to overwrite [[the]] <u>at least one</u> motion <u>vector</u> ~~vector(s)~~ of a second macroblock previously stored in the Kth memory unit, wherein the second macroblock is located at an $(L-1)^{th}$ row and the Kth column, K is an integer between 1 and N, and L is an integer larger than 1.

20 14. (original) The method of claim 13, wherein the video frame is a progressive frame.

15. (original) The method of claim 13, wherein the video frame is an interlaced frame.

16. (original) The method of claim 13, wherein the first memory comprises a DRAM, an
25 SRAM, or registers.

17. (currently amended) The method of claim 13, further comprising:
allocating an additional memory unit in a second memory, wherein the additional

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memory unit is capable of storing [[the]] <u>at least one</u> motion <u>vector</u> <s>vector(s)</s> of one macroblock;

when a third macroblock of the video frame is decoded, storing [[the]] <u>at least one</u> motion <u>vector</u> <s>vector(s)</s> of the third macroblock in the additional memory unit to overwrite [[the]] <u>at least one</u> motion <u>vector</u> <s>vector(s)</s> of a fourth macroblock previously stored in the additional memory unit, wherein the fourth macroblock is decoded immediately before the third macroblock.

18. (original) The method of claim 17, wherein the first memory comprises processing registers, registers, a DRAM, or an SRAM.